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Remarks

Claim 7 is cancelled and claims 1 and 8 are amended.

Claims 1, 4, 5 and 8 to 13 are pending in this application of which only claim 1 is in independent form.

Claim 1 was rejected under 35 USC 103(a) as being unpatentable over Tenney (937) in view of legal precedent.

Claim 1 is amended herein to incorporate the subject matter of claim 7 and the following will show that claim 1, as amended, patentably distinguishes the applicants' invention over this reference.

Before discussing Tenney (937), applicants believe it will be helpful to first briefly review their invention as it is now defined in amended claim 1.

The applicants' invention is directed to an internal combustion engine having an exhaust-gas muffler wherein a resonance pipe extends from the discharge outlet of the engine. The resonance pipe opens into an inlet opening in the attenuating space of the exhaust-gas muffler. The equivalent diameter of the resonance pipe is approximately constant over the entire length thereof, that is, between the discharge outlet of the engine and the inlet opening into the attenuating space of the exhaust-gas muffler. The resonance pipe opens with a diaphragm into the exhaust-gas muffler and the diameter of the diaphragm is designed with respect to the volume of the piston displacement of the engine.

Turning now to Tenney (937), applicants note that FIGS. 1

to 3 of this reference are referred to in the action. It is true that FIGS. 1 to 3 show a resonance pipe which is mounted between the discharge outlet from the engine and the inlet opening into an exhaust-gas muffler. The pipe of the muffler, however, has no constant diameter. As disclosed in Tenney (937) at column 6, lines 26 to 38, a section of the muffler connects to the discharge section 26 with the diameter of this section of the muffler increasing. Then follows a section having a uniform diameter. Still another section follows whose diameter becomes less and less. A reflection of the sound wave is intended to take place because of the increasing and decreasing diameters. A constant equivalent diameter over the length of the resonance pipe is nowhere disclosed.

In the action, reference is made to the pipe section 41 of FIG. 2 of Tenney (937). The pipe section 41, however, does not extend from the discharge outlet of the engine.

In contrast to Tenney (937), applicants' claim 1 requires that:

"said equivalent diameter ( $D, D'$ ) of said resonance pipe being approximately constant over the length ( $L, L'$ ) thereof."  
(emphasis added)

A resonance pipe having a constant diameter which extends from the discharge outlet of the engine to the attenuating space of the exhaust-gas muffler is nowhere suggested or disclosed in Tenney (937). Indeed, Tenney (937) would steer our person of ordinary skill away from the above feature and limitation of the applicants' invention.

Tenney (937) also does not show a diaphragm with which the

resonance pipe opens into the attenuating space of the exhaust-gas muffler. In this connection, reference is made in the action to the throttle flap 48 which is mounted approximately at the mid portion in the discharge pipe of the exhaust-gas muffler of this reference. A diaphragm at the inlet opening into the exhaust-gas muffler is not disclosed or even suggested. What Tenney (937) shows instead is an exhaust-gas pipe section having a multiplicity of openings 79 formed therein. A diaphragm or diameter reduction is not shown.

Thus, it can be seen that Tenney (937) discloses no resonance pipe that opens into an exhaust-gas muffler with a diaphragm. Also, the following feature and limitation of claim 1 is nowhere suggested in Tenney (937):

"said diaphragm having an equivalent diameter ( $d, d'$ ) measured in millimeters which amounts to approximately 1 to 3 times the square root of the volume of the piston displacement of said engine with said volume being measured in cubic centimeters;"

The above feature and limitation is characterized in the action as being obvious to one of ordinary skill in the art. However, applicants respectfully submit that there must be some suggestion in Tenney (937) which would lead our person of ordinary skill to seek out the subject matter of the above-quoted feature and limitation and no such lead or hint is set forth in the reference.

For the reasons advanced above, applicants respectfully submit that claim 1 should now patentably distinguish the applicants' invention over Tenney (937) and be allowable.

Applicants emphasize that there is no suggestion in

Tenney (937) which could lead our person of ordinary skill to hit upon the idea of providing a resonance pipe which extends from the discharge outlet of the engine and into the attenuating space of the exhaust-gas muffler with this resonance pipe having an approximately constant equivalent diameter over its length. Indeed, Tenney (937) would teach away from the applicants' invention because this reference shows a pipe having a varying diameter over its length for the specific purpose of achieving a reflection of the sound waves. Thus, if anything, Tenney (937) would teach away from the applicants' invention.

The remaining claims 4, 5 and 8 to 13 are all dependent from claim 1 so that they too should now be allowable.

Reconsideration of this application is earnestly solicited.

Respectfully submitted,



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